WHAT IS CLAIMED IS:

1. Method for the sending of a signal formed by vectors, each vector comprising N source symbols to be sent, and implementing M transmit antennas where M is greater than or equal to 2,

characterized in that a linear precoding is performed on said signal, implementing a matrix product of a source matrix, formed by said vectors organized in successive rows, by a linear precoding matrix, delivering a precoded matrix,

and in that precoded vectors corresponding to columns of said precoded matrix are sent successively, the M symbols of each precoded vector being distributed over said M antennas.

2. Sending method according to claim 1, characterized in that said precoding matrix is a block matrix.

3. Sending method according to any one of the claims 1 and 2, characterized in that said precoding matrix is a unitary matrix having a size greater than or equal to M.

4. Sending method according to any of the claims 1 to 3, characterized in that said precoding matrix has the form:

$$\Theta_L = \sqrt{\frac{2}{L}} \cdot \begin{bmatrix} \Theta_{L/2} & \Theta_{L/2} \\ \Theta_{L/2} & -\Theta_{L/2} \end{bmatrix}^T$$

$$\text{with } \Theta_2 = \begin{bmatrix} e^{i\theta_1}\cos\eta & e^{i\theta_2}\sin\eta \\ -e^{-i\theta_2}\sin\eta & e^{-i\theta_1}\cos\eta \end{bmatrix}$$

and $\eta = \frac{\pi}{4} + k\frac{\pi}{2}$, $\theta_2 = \theta_1 - \frac{\pi}{2}$, and for $i \in [1,2]$, $\theta_i = \frac{\pi}{4} + k'\frac{\pi}{2}$ where k, k' are relative integers.

5. Method for the reception of a signal sent on M transmit antennas where M is greater than or equal to 2, implementing P receiver antennas, where P greater than or equal to 2,

characterized in that reception vectors are received on said P antennas and are distributed by columns in a reception matrix, the P symbols of a reception vector

being distributed on said P antennas,

and in that it implements a processing of said reception matrix, comprising a step of multiplication by a linear de-precoding matrix representing a linear precoding matrix used at sending,

so as to obtain a de-precoded matrix by which it is possible to extract an estimation of the source symbols sent.

6. Reception method according to claim 5, characterized in that said de-precoding matrix is the conjugate transpose matrix of said precoding matrix.

7. Reception method according to claim 6 characterized in that, said sent signal being conveyed between said M transmit antennas and said P receiver antennas by a transmission channel, said reception matrix is multiplied, during said processing operation, by a matrix representing the inverse of said transmission channel, so as to obtain a matrix of estimated symbols sent,

and in that said matrix of estimated symbols sent is then multiplied by the de-precoding matrix.

8. Reception method according to any of the claims 6 and 7, characterized in that it comprises a preliminary step of detection of said M transmit antennas implementing a successive cancellation algorithm.

9. Reception method according to claim 5 characterized in that, said sent signal being conveyed between said M transmit antennas and said P receiver antennas by a transmission channel, said de-precoding matrix is an inverse matrix of a total matrix associating the matrix of said channel and said linear precoding matrix.

10. Reception method according to claim 9, characterized in that said de-precoding matrix is determined by implementation of a Cholesky decomposition algorithm.

11. Signal formed by vectors sent successively on M transmit antennas, where M is greater than or equal to 2, the M symbols of each vector being distributed on said M antennas,

characterized in that said vectors are precoded vectors corresponding to columns

of a precoded matrix obtained by a matrix product of a linear precoding matrix and a source matrix, formed by source vectors each comprising N source symbols to be sent, said source vectors being organized in said source matrix in successive rows.

12. Device for sending a signal formed by vectors each comprising N source symbols to be sent, and implementing M transmit antennas, where M is greater than or equal to 2,

characterized in that it comprises means of linear precoding of said signal, implementing a matrix product of a source matrix, formed by said vectors organized in successive rows, by a linear precoding matrix, delivering a precoded matrix,

and means for successively sending precoded vectors corresponding to columns of said precoded matrix, the M symbols of each precoded vector being distributed over said M antennas.

13. Device for the reception of a signal sent on M transmit antennas, where M is greater than or equal to 2, said device comprising P receiver antennas, where P is greater than or equal to 2,

characterized in that it comprises means of reception, on said P antennas, of reception vectors, and means of distribution by columns of said reception vectors in a reception matrix, the P symbols of a reception vector being distributed on said P antennas,

and in that it comprises means of processing of said reception matrix, comprising means of multiplying by a linear de-precoding matrix representing a linear precoding matrix used at sending,

so as to obtain a de-precoded matrix by which it is possible to extract an estimation of the source symbols sent.